

1       What is claimed is:

2       1. A system for delivering electronic programming to a user,

3           the system comprising:

4                a printed matter having at least one sensor and a

5                transmitter for transmitting a coded signal in

6                response to an actuation of said sensor;

7                an intelligent controller having associated therewith a

8                receiver for receiving said coded signal and a

9                means for accessing programming material; and

10               a display unit for presenting said programming

11               material;

12               wherein said user actuates said sensor to cause said

13               intelligent controller to access said programming

14               material and said display unit to present said

15               programming material to said user.

16       2. A system as defined in claim 1 wherein said sensor comprises

17               a touch sensor.

18       3. A system as defined in claim 1 wherein said sensor comprises

19               a capacitive touch sensor.

20       4. A system as defined in claim 1 wherein said sensor comprises

21               a conductive touch sensor.

22       5. A system as defined in claim 1 wherein said sensor comprises

- 1                   a page sensor.
- 2       6. A system as defined in claim 1 wherein said printed matter
- 3                   includes both a page sensor and a touch sensor.
- 4       7. A system as defined in claim 1 wherein said printed matter
- 5                   includes a pad having a plurality of touch sensors.
- 6       8. A system as defined in claim 1 wherein said printed matter
- 7                   includes a plurality of pads, each having a plurality of
- 8                   touch sensors.
- 9       9. A system as defined in claim 1 wherein said intelligent
- 10                  controller includes a microprocessor.
- 11       10. A system as defined in claim 1 wherein said intelligent
- 12                  controller has associated therewith a memory means for
- 13                  storing programming material.
- 14       11. A system as defined in claim 10 wherein said memory means
- 15                  comprises a magnetic disk.
- 16       12. A system as defined in claim 10 wherein said memory means
- 17                  comprises a PCMCIA card.
- 18       13. A system as defined in claim 10 wherein said memory means
- 19                  comprises a flash RAM.
- 20       14. A system as defined in claim 10 wherein said memory means
- 21                  comprises a cache.
- 22       15. A system as defined in claim 10 wherein said memory means

comprises a CD-ROM.

2 16. A system as defined in claim 10 wherein said memory means is  
3 selected from the group consisting of: a ROM; a WORM disk; a  
4 floppy disk; a multi-layer optical disk; a magneto-optical  
5 disk; an IC card; a magnetic bubble memory; a sequential  
6 access memory; a magnetic tape; a magnetic drum; a magneto-  
7 optical drum; a static RAM; and a dynamic RAM.

8 17. A system as defined in claim 1 wherein said intelligent  
9 controller includes a removable memory means.

10 18. A system as defined in claim 17 wherein said printed matter  
11 and said removable memory means are supplied to, or  
12 purchased by, the user as a set.

13 19. A system as defined in claim 1 wherein said means for  
14 accessing programming material operates via a data link.

15 20. A system as defined in claim 19 wherein said data link  
16 comprises a telephone line.

17 21. A system as defined in claim 19 wherein said data link  
18 comprises a computer network.

19 22. A system as defined in claim 19 wherein said data link  
20 comprises an ISDN network.

21 23. A system as defined in claim 19 wherein said data link  
22 comprises an Ethernet network.

- 1 24. A system as defined in claim 19 wherein said data link
- 2 comprises a CATV line.
- 3 25. A system as defined in claim 1 wherein said intelligent
- 4 controller has associated therewith a buffer for temporarily
- 5 storing the programming material.
- 6 26. A system as defined in claim 1 wherein said intelligent
- 7 controller includes means for decompressing compressed
- 8 programming material.
- 9 27. A system as defined in claim 1 wherein said display unit
- 10 comprises a video display.
- 11 28. A system as defined in claim 1 wherein said display unit
- 12 comprises an audio transducer.
- 13 29. A system as defined in claim 1 wherein said display unit
- 14 comprises a flat panel display.
- 15 30. A system as defined in claim 29 wherein said flat panel
- 16 display is embedded within said printed matter.
- 17 31. A system as defined in claim 1 wherein said display unit has
- 18 associated therewith a buffer for temporarily storing
- 19 programming material.
- 20 32. A system as defined in claim 1 wherein said display unit has
- 21 associated therewith means for decompressing compressed
- 22 programming material.

- 1       33. A system as defined in claim 1 wherein said display unit
- 2               comprises a CATV converter, or wireless cable converter, and
- 3               a television set coupled thereto.
- 4       34. A system as defined in claim 1 wherein said display unit
- 5               comprises a personal computer.
- 6       35. A system as defined in claim 34 wherein said personal
- 7               computer includes a CD-ROM for storing programming material.
- 8       36. A system as defined in claim 34 wherein said personal
- 9               computer includes means for decompressing compressed
- 10               programming material.
- 11      37. A system as defined in claim 1 wherein said intelligent
- 12               controller and said display unit each comprise portions of a
- 13               personal computer.
- 14      38. A system as defined in claim 1 wherein said programming
- 15               material includes entertainment programming.
- 16      39. A system as defined in claim 1 wherein said programming
- 17               material includes educational programming.
- 18      40. A system as defined in claim 1 wherein said programming
- 19               material supplements information contained in said printed
- 20               matter.
- 21      41. A system as defined in claim 1 wherein said programming
- 22               material includes commercial programming.

- 1       42. A system as defined in claim 1 wherein said programming
- 2               material includes promotional programming.
- 3       43. A system as defined in claim 1 wherein said programming
- 4               material includes informational programming.
- 5       44. A system as defined in claim 1 wherein said transmitter and
- 6               receiver communicate via an energy pathway.
- 7       45. A system as defined in claim 44 wherein said energy pathway
- 8               comprises a conductive cable.
- 9       46. A system as defined in claim 44 wherein said energy pathway
- 10               comprises an optical cable.
- 11       47. A system as defined in claim 44 wherein said energy pathway
- 12               comprises a capacitively coupled link.
- 13       48. A system as defined in claim 1 wherein said transmitter and
- 14               receiver communicate via a wireless RF link.
- 15       49. A system as defined in claim 1 wherein said transmitter and
- 16               receiver communicate via an IR link.
- 17       50. A system for displaying programming to a user, the system
- 18               comprising:
  - 19               a printed matter having at least one machine
  - 20                        recognizable feature;
  - 21               a feature recognition unit having associated therewith
  - 22                        a means for recognizing said feature and a

transmitter for transmitting a coded signal in response to the recognition of said feature; an intelligent controller having associated therewith a receiver for receiving said coded signal and means for accessing programming material; and a display unit for presenting said programming material;

wherein said recognition unit, in response to the recognition of said feature, causes said intelligent controller to access said programming material and said display unit to execute or display said programming material.

13 51. A system as defined in claim 50 wherein said intelligent  
14 controller includes a microprocessor.

15 52. A system as defined in claim 50 wherein said intelligent  
16 controller has associated therewith a memory means for  
17 storing programming material.

18 53. A system as defined in claim 52 wherein said memory means  
19 comprises a magnetic disk.

20 54. A system as defined in claim 52 wherein said memory means  
21 comprises a PCMCIA card.

22 55. A system as defined in claim 52 wherein said memory means

comprises a flash RAM.

2 56. A system as defined in claim 52 wherein said memory means  
3 comprises a cache.

4 57. A system as defined in claim 52 wherein said memory means  
5 comprises a CD-ROM.

6 58. A system as defined in claim 52 wherein said memory means is  
7 selected from the group consisting of: a ROM; a WORM disk; a  
8 floppy disk; a multi-layer optical disk; a magneto-optical  
9 disk; an IC card; a magnetic bubble memory; a sequential  
10 access memory; a magnetic tape; a magnetic drum; a magneto-  
11 optical drum; a static RAM; and a dynamic RAM.

12 59. A system as defined in claim 50 wherein said intelligent  
13 controller includes a removable memory means.

14 60. A system as defined in claim 59 wherein said printed matter  
15 and said removable memory means are supplied to, or  
16 purchased by, the user as a set.

17 61. A system as defined in claim 50 wherein said means for  
18 accessing programming material operates via a data link.

19 62. A system as defined in claim 61 wherein said data link  
20 comprises a telephone line.

21 63. A system as defined in claim 61 wherein said data link  
22 comprises a computer network.

- 1 64. A system as defined in claim 61 wherein said data link
- 2       comprises an ISDN network.
- 3 65. A system as defined in claim 61 wherein said data link
- 4       comprises an Ethernet network.
- 5 66. A system as defined in claim 61 wherein said data link
- 6       comprises a CATV line.
- 7 67. A system as defined in claim 50 wherein said intelligent
- 8       controller has associated therewith a buffer for temporarily
- 9       storing the programming material.
- 10 68. A system as defined in claim 50 wherein said intelligent
- 11       controller includes means for decompressing compressed
- 12       programming material.
- 13 69. A system as defined in claim 50 wherein said display unit
- 14       comprises a video display.
- 15 70. A system as defined in claim 50 wherein said display unit
- 16       comprises an audio transducer.
- 17 71. A system as defined in claim 50 wherein said display unit
- 18       comprises a flat panel display.
- 19 72. A system as defined in claim 71 wherein said flat panel
- 20       display is embedded within said printed matter.
- 21 73. A system as defined in claim 50 wherein said display unit
- 22       has associated therewith a buffer for temporarily storing

1           programming material.

2       74. A system as defined in claim 50 wherein said display unit  
3           has associated therewith means for decompressing compressed  
4           programming material.

5       75. A system as defined in claim 50 wherein said display unit  
6           comprises a CATV converter, or wireless cable converter, and  
7           a television set coupled thereto.

8       76. A system as defined in claim 50 wherein said display unit  
9           comprises a personal computer.

10      77. A system as defined in claim 76 wherein said personal  
11           computer includes a CD-ROM for storing programming material.

12      78. A system as defined in claim 76 wherein said personal  
13           computer includes means for decompressing compressed  
14           programming material.

15      79. A system as defined in claim 50 wherein said intelligent  
16           controller and said display unit each comprise portions of a  
17           personal computer.

18      80. A system as defined in claim 50 wherein said programming  
19           material includes entertainment programming.

20      81. A system as defined in claim 50 wherein said programming  
21           material includes educational programming.

22      82. A system as defined in claim 50 wherein said programming

1 material supplements information contained in said printed  
2 matter.

3 83. A system as defined in claim 50 wherein said programming  
4 material includes commercial programming.

5 84. A system as defined in claim 50 wherein said programming  
6 material includes promotional programming.

7 85. A system as defined in claim 50 wherein said programming  
8 material includes informational programming.

9 86. A system as defined in claim 50 wherein said transmitter and  
10 receiver communicate via an energy pathway.

11 87. A system as defined in claim 86 wherein said energy pathway  
12 comprises a conductive cable.

13 88. A system as defined in claim 86 wherein said energy pathway  
14 comprises an optical cable.

15 89. A system as defined in claim 86 wherein said energy pathway  
16 comprises a capacitively coupled link.

17 90. A system as defined in claim 50 wherein said transmitter and  
18 receiver communicate via a wireless RF link.

19 91. A system as defined in claim 50 wherein said transmitter and  
20 receiver communicate via an IR link.

21 92. A system as defined in claim 50 wherein said feature  
22 comprises a bar code.

1 93. A system as defined in claim 50 wherein said feature  
2 comprises an invisible bar code.

3 94. A system as defined in claim 50 comprises wherein said  
4 feature comprises a magnetic code.

5 95. A system as defined in claim 50 wherein said feature  
6 comprises printed indicia.

7 96. A system as defined in claim 50 wherein said recognition  
8 unit comprises a hand-held unit.

9 97. A system as defined in claim 96 wherein said hand-held  
10 recognition unit includes a CCD camera.

11 98. A system as defined in claim 96 wherein said hand-held  
12 recognition unit includes a bar code reader.

13 99. A system as defined in claim 96 wherein said hand-held  
14 recognition unit comprises a magnetic detector.

15 100. A system as defined in claim 96 wherein said hand-held  
16 recognition unit comprises a scanner/mouse.

17 101. A system for delivering electronic programming to a user,  
18 the system comprising:  
19 a printed matter having associated therewith at least  
20 one sensor, a controller responsive to an  
21 actuation of said sensor, and a transmitter  
22 responsive to said controller for transmitting a

coded signal; and

a display unit having associated therewith a receiver

for receiving said coded signal, means for

accessing programming material in response

thereto, and means for displaying or executing

said programming material; and

wherein said user actuates said sensor to cause said

programming material to be accessed and displayed.

or executed

102 A system as defined in claim 101 wherein said controller

includes a microprocessor.

103. A system as defined in claim 101 wherein said display unit

further has associated therewith a memory means for storing programming material.

104. A system as defined in claim 103 wherein said memory means

comprises a magnetic disk.

105. A system as defined in claim 103 wherein said memory means

comprises a PCMCIA card.

106. A system as defined in claim 103 wherein said memory means

comprises a flash RAM.

107. A system as defined in claim 103 wherein said memory means

comprises a cache.

1 108. A system as defined in claim 103 wherein said memory means  
2 comprises a CD-ROM.

3 109. A system as defined in claim 101 wherein said memory means  
4 is selected from the group consisting of: a ROM; a WORM  
5 disk; a floppy disk; a multi-layer optical disk; a magneto-  
6 optical disk; an IC card; a magnetic bubble memory; a  
7 sequential access memory; a magnetic tape; a magnetic drum;  
8 a magneto-optical drum; a static RAM; and a dynamic RAM.

9 110. A system as defined in claim 101 wherein said further has  
10 associated therewith a removable memory means.

11 111. A system as defined in claim 110 wherein said printed matter  
12 and said removable memory means are supplied to, or  
13 purchased by, the user as a set.

14 112. A system as defined in claim 101 wherein said means for  
15 accessing programming material operates via a data link.

16 113. A system as defined in claim 112 wherein said data link  
17 comprises a telephone line.

18 114. A system as defined in claim 112 wherein said data link  
19 comprises a computer network.

20 115. A system as defined in claim 112 wherein said data link  
21 comprises an ISDN network.

22 116. A system as defined in claim 112 wherein said data link

1                   comprises an Ethernet network.

2       117. A system as defined in claim 112 wherein said data link  
3                   comprises a CATV line.

4       118. A system as defined in claim 101 wherein said controller has  
5                   associated therewith a power-down or slow-down circuit for  
6                   reducing power consumption in said controller.

7       119. A system as defined in claim 101 wherein said controller has  
8                   associated therewith a solar cell for powering said  
9                   controller..

10      120. A system as defined in claim 101 wherein said display unit  
11                   comprises a video display.

12      121. A system as defined in claim 101 wherein said display unit  
13                   comprises an audio transducer.

14      122. A system as defined in claim 101 wherein said display unit  
15                   comprises a flat panel display.

16      123. A system as defined in claim 122 wherein said flat panel  
17                   display is embedded within said printed matter.

18      124. A system as defined in claim 101 wherein said display unit  
19                   has associated therewith a buffer for temporarily storing  
20                   programming material.

21      125. A system as defined in claim 101 wherein said display unit  
22                   has associated therewith means for decompressing compressed

1           programming material.

2       126. A system as defined in claim 101 wherein said display unit  
3           comprises a CATV converter, or wireless cable converter, and  
4           a television set coupled thereto.

5       127. A system as defined in claim 101 wherein said display unit  
6           comprises a personal computer.

7       128. A system as defined in claim 127 wherein said personal  
8           computer includes a CD-ROM for storing programming material.

9       129. A system as defined in claim 127 wherein said personal  
10           computer includes means for decompressing compressed  
11           programming material.

12       130. A system as defined in claim 101 wherein said controller and  
13           said display unit each comprise portions of a personal  
14           computer.

15       131. A system as defined in claim 101 wherein said programming  
16           material includes entertainment programming.

17       132. A system as defined in claim 101 wherein said programming  
18           material includes educational programming.

19       133. A system as defined in claim 101 wherein said programming  
20           material supplements information contained in said printed  
21           matter.

22       134. A system as defined in claim 101 wherein said programming

1 material includes commercial programming.

2 135. A system as defined in claim 101 wherein said programming  
3 material includes promotional programming.

4 136. A system as defined in claim 101 wherein said programming  
5 material includes informational programming.

6 137. A system as defined in claim 101 wherein said transmitter  
7 and receiver communicate via an energy pathway.

8 138. A system as defined in claim 137 wherein said energy pathway  
9 comprises a conductive cable.

10 139. A system as defined in claim 137 wherein said energy pathway  
11 comprises an optical cable.

12 140. A system as defined in claim 137 wherein said energy pathway  
13 comprises a capacitively coupled link.

14 141. A system as defined in claim 101 wherein said transmitter  
15 and receiver communicate via a wireless RF link.

16 142. A system as defined in claim 101 wherein said transmitter  
17 and receiver communicate via an IR link.

18 143. A method of providing, accessing or utilizing electronic  
19 media services, the method comprising the steps of:

20 providing a printed matter having at least one sensor  
21 associated therewith;

22 providing or programming an intelligent controller to,

in response to an actuation of said sensor, perform a pre-programmed command; and executing said pre-programmed command to access or control an electronic media.

5 144. A method of providing electronic programming material, the  
6 method comprising the steps of:

providing a printed matter to a potential customer; pre-programming an intelligent controller to access or control the transmission of electronic programming material in response to an event wherein the customer interacts with the printed matter in a particular manner; and displaying or executing said programming material in response to the intelligent controller.

145. A method as defined in claim 144 wherein said printed matter comprises a low-cost, throw away publication.

17 146. A method as defined in claim 144 wherein said customer  
18 utilizes a feature recognition unit to interact with said  
19 printed matter.

20 147. A method of providing or accessing shop-at-home services,  
21 the method including the steps of:

22 incorporating within a printed catalogue at least one

sensor or machine-recognizable feature; programming a controller to execute a pre-programmed command in response to an event wherein a customer interacts with said sensor or feature; and responding to the execution of said pre-programmed command.

7 148. A method as defined in claim 147 wherein responding  
8 comprises presenting or delivering commercial programming to  
9 the customer.

149. A method as defined in claim 147 wherein responding comprises presenting or delivering promotional programming to the customer.

150. A method as defined in claim 147 wherein responding comprises contacting the customer by telephone.

151. A method as defined in claim 147 wherein responding comprises providing an electronic menu to the customer

17 152. A method as defined in claim 151, further comprising the  
18 step of responding to the customer's menu selection(s).

19       153. An improved method of instruction, said method including the  
20            steps of:

21 providing a printed textbook having at least one sensor  
22 or machine-recognizable feature associated

therewith;

providing a means, distinct from said textbook, for executing a pre-programmed command in response to an event wherein a reader of the textbook interacts with said sensor or feature; and responding to the execution of said command.

154. An improved method of instruction as defined in claim 153

wherein responding comprises: causing or controlling the delivery or presentation of multimedia material or other information related to that in the textbook to the reader.

155. An improved method of instruction as defined in claim 153

wherein responding comprises: forming a communication link between the reader and a tutor or consultant.

156. A low cost, throw-away printed matter useful for accessing

electronic media services, said printed matter including:

at least one sensor; and

means, responsive to an actuation of said sensor, for transmitting a coded signal indicative of said sensor.

20 157. A feature recognition unit useful, in combination with a  
21 printed matter, for accessing electronic media services,  
22 said recognition unit comprising:

1                   means for recognizing features on said printed matter;

2                   and

3                   means, responsive to the recognition of a feature, for  
4                   transmitting a coded signal indicative of said  
5                   recognized feature.

6   158. A feature recognition unit as defined in claim 157 wherein  
7                   said means for recognizing reads bar codes.

8   159. A feature recognition unit as defined in claim 157 wherein  
9                   said means for recognizing reads printed indicia.

10   160. A feature recognition unit as defined in claim 157 wherein  
11                   said means for recognizing reads magnetic codes.

12   161. A feature recognition unit as defined in claim 157 wherein  
13                   said means for recognizing comprises a CCD camera.

14   162. A feature recognition unit as defined in claim 157 wherein  
15                   said means for recognizing comprises a bar code reader.

16   163. A feature recognition unit as defined in claim 157, further  
17                   including a microprocessor.

18   164. A system for delivering an electronic advertisement to a  
19                   user, the system comprising:  
20                   a printed advertisement having associated therewith at  
21                   least one sensor or machine-recognizable feature,  
22                   a controller, responsive to an actuation of said

sensor or a recognition of said machine-  
recognizable feature, and a transmitter,  
responsive to said controller, for transmitting a  
coded signal; and  
a display unit including a receiver for receiving said  
coded signal and means for providing said user  
with said electronic advertisement related to said  
printed advertisement.

165. A system for delivering information services to a user, the system comprising:  
a printed reference having associated therewith at least one sensor or machine-recognizable feature, a controller, responsive to an actuation of said sensor or a recognition of said machine-recognizable feature, and a transmitter, responsive to said controller, for transmitting a coded signal; and  
a display unit including a receiver for receiving said coded signal and means for providing said user with said information services related to said printed reference.

22 166. A system for delivering information services as defined in

1 claim 165 wherein said display unit is contained within a  
2 personal communicator device.

3 167. A system for delivering information services as defined in  
4 claim 165 wherein said display unit is contained within a  
5 remote pager device.